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Time to stop relying on things past

US science advocates are depending on strategies and statistics that may not survive contemporary politics, says David Goldston.

In times of fiscal crisis, the reflex response of interest groups is to circle the wagons and defend the status quo, arguing that any cuts would be fatal. Predictably, the scientific community in the United States is currently following that script, and it is a perfectly reasonable and well executed Plan A. But there is not much of a Plan B, and there should be, especially given that the United States could be entering a prolonged period of relative austerity.

It is not surprising that science advocates feel comfortable with, and even complacent about, Plan A. They have been making essentially the same arguments for basic research for nearly 70 years — linking it to economic growth and other public benefits — and few in politics have challenged them. Moreover, the administration of US President Barack Obama is egging them on, as part of its effort to ratchet up pressure on the Republican-controlled House of Representatives to raise revenues instead of slashing spending. It's hard to have doubts about Plan A when a natural target — those who propose the budget — urges you to implement it more fiercely.

Yet the time-honoured can also be the shopworn, and scientists and their advocates should address the weaknesses in this strategy before the pitfalls become more visible.

The first problem is that some of Plan A's familiar claims cannot survive close scrutiny. For example, two prestigious groups, the President's Council of Advisors on Science and Technology and the National Academy of Sciences, this year issued reports that call for total US research-and-development spending to increase until it reaches at least 3% of gross domestic product. The Obama administration has cited this goal for some time, and the European Union has a similar goal.

Unfortunately, there is little analytical basis for this number; it is a political assertion masquerading as a mathematical constant. The only argument in its favour is that some nations spend that much. Those countries hardly add up to a coherent case; they include nations with smaller economies, as well as countries such as Japan, which has been in the economic doldrums for years.

The number does not take into account what kind of research is being pursued, or by what sectors of the economy, or how much is actually being spent. A dissertation could be written on how 3% acquired its magical properties, but the number doesn't even seem to be based on spending levels in some past golden age. Rather, it is more of a back-of-the-envelope comparison done when the United States got nervous about competitiveness in the 1980s.

Is there any real harm in this? Yes, in at least two ways. The target helps to fuel the scientific community's demoralizing and distorted sense that it is being neglected and wilfully financed at suboptimal levels. And it leaves science advocates unable to answer persuasively if officials ask for proof that

funding is inadequate or for an estimate of what would be sufficient.

Science lobbyists have begun to address a second weakness in Plan A: its insularity. Scientists often talk as though science funding is decided in a vacuum, yet a major determinant of the research budget is the overall level of civilian domestic spending. The vacuum-packed approach generally made sense when overall spending was relatively stable. Why get involved in high-stakes, partisan feuding over the budget when it is safer to stand on the sidelines?

For more than a year, though, the House Republicans and Obama have engaged in a fundamental battle over the shape of the federal budget, and all domestic spending is imperilled without new tax revenues. So science groups have taken tentative steps towards weighing in on broader issues. In a letter to Congress and Obama earlier this month, more than 100 science and university groups said that tax revenues and reform of programmes such as Medicare should be part of any deficit agreement, without endorsing any specific proposal. This strategy can alienate some politicians and so carries risks. And in some ways, it's a shame to see every group sucked into the political maelstrom. But the change in strategy makes sense; to sit out a debate that will set the context for your future is even riskier.

That kind of strategic calculus should lead advocates to confront a graver weakness in their reliance on Plan A. No matter what agreement the President and the Republicans reach, it is likely to usher in, at best, an era of slower growth for science spending. Thanks to previous deals, federal

spending is already expected to be flat in real terms for the next decade. If scientists fail to plan for that eventuality, then decisions will be made without them. As part of plan B, they need to think about questions such as: which agencies, programmes and fields are the lowest priorities? How can the government ensure that younger researchers are still able to get funding? Is there a thoughtful way to shrink a system that produces ever more grant proposals?

The scientific community must also devise better ways to figure out when spending cuts are actually causing serious problems. Simple measures such as increased proposal pressure will not convince. It also needs ways to evaluate specific cost-cutting strategies.

Plan A has seen science advocates through some close scrapes, and Obama officials say that they will try to protect science funding. But the plan pretty much assumes that fiscal policy and politics are not fundamentally different today from what they were in the 1950s, and that success just demands more intensive lobbying. That's too risky a notion not to have a back-up. ■

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